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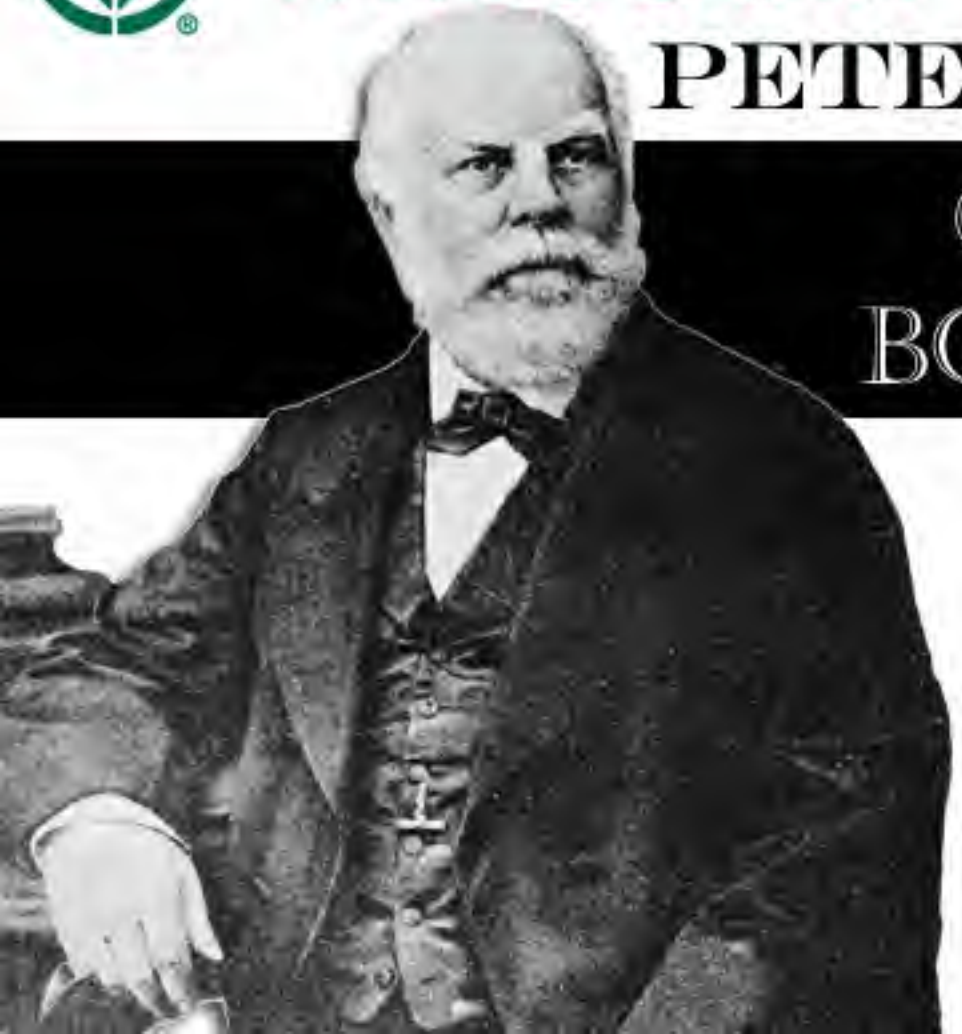

Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Allen

10,5 – 13 lin
415
mostly 11.6 li
0.025 – 0.031 li
mostly 0.028 li

"Pinus Mughus"
H. D. Muggiver
May 25 1864 just
flowering – male amts
adhering; a small shrub
1½ feet high; does not
suffered from the cold
in winter, but is
stunted? probably from
heat in Summer

male aments 4–5 lines long
involucre scarcely over one line, 2 exterior
carinate scales small, inner broad
acute, short, as long or shorter the involucre
persistent.

9–10
involucral scales!

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1952

0 cm 1 2 3 4 5 6 7 8 9 10
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" Pinus Meghus " " P. humilis " Sime 1863

H. B. Cambr. Sime 3rd 1863

111
0.031

111
0.033

x 415

x10

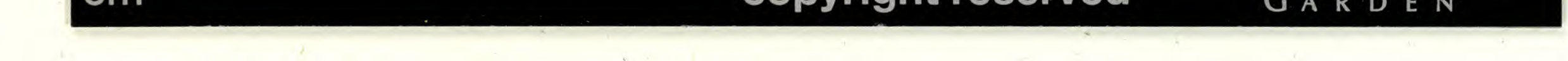
x½

sheaths

111
0034

6 (or 7) involucral bracts

GRAY HERBARIUM
HARVARD UNIVERSITY
CAMBRIDGE, MASS.



leaves $1\frac{1}{4}-2\frac{1}{2}$"

sheaths young 5–6 l. long

2^{d} year $2-2\frac{1}{2}$ l. long

basis sometimes persistent 2^{d} year.

scale inflorescence $\frac{3}{4}-1$ inch long.

ament explanded 5–6 l. long.

most of the 6 or 7 involucre bracts often rounded forward

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X 415

"Pinus Mughus"

Octob 1st 1863

Solalex, P. Hoerle 1830 Switzerland

not fully developed.

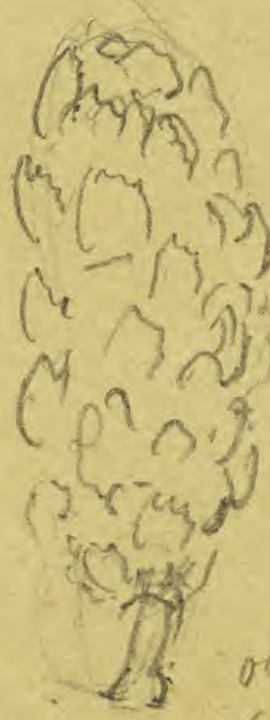
0.037

X4

X10

very acute with 7 sides, 7th very small

X4



old and of last year 5 sides removed

X10

old one examined with 6 sides

0.032 - 0.039

many 0.033-35

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X 15

Pinus rotundata Link Octob 1st 1853

Hort Bot Berlin

0,030

X 4

usual

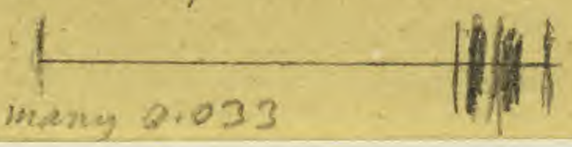
0.032

X 10

seen once

by involucral scales

0·029 0·036



many 0·033

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X415

Signs of Pollen of Pinus sylvestris Octob 6th 1863

0.026 , 0.030. 0.032 – 0.036

0.034 0.033 – 0.035
mostly

Pollen from Shaw's Garden May 2d 1862
18 months old

0.031 – 0.026
mostly 0.034

Pollen from Detroit, June 1863
cult. – Belgium

0.033 – 0.034 ripe Pollen
0.029 – 0.032 – – unripe

Pollen from Frankfort specimen 1826
37 years old

ripe

Pistil anther

unripe

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9 tot

29

P. sylvestris

453-461

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cm
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Pinus sylvestris

Missouri Bot Garden

May 9 1862

dry

× 415

in water

2 lateral and
1 upper show bract
persistent or ament
(and deciduous with
it

0.034

× 4

upper side

base of bract
short
fleshy

× 10

upper
side

lateral

lower
side

top

bract at base of bunches of leaves
or female aments early deciduous
brown membranaceous, leaving a green fleshy base

bract
fallen off, deciduous

M. W. ALEXANDER,

SOUTH-EAST CORNER OF FOURTH AND MARKET STREETS,

ST. LOUIS.

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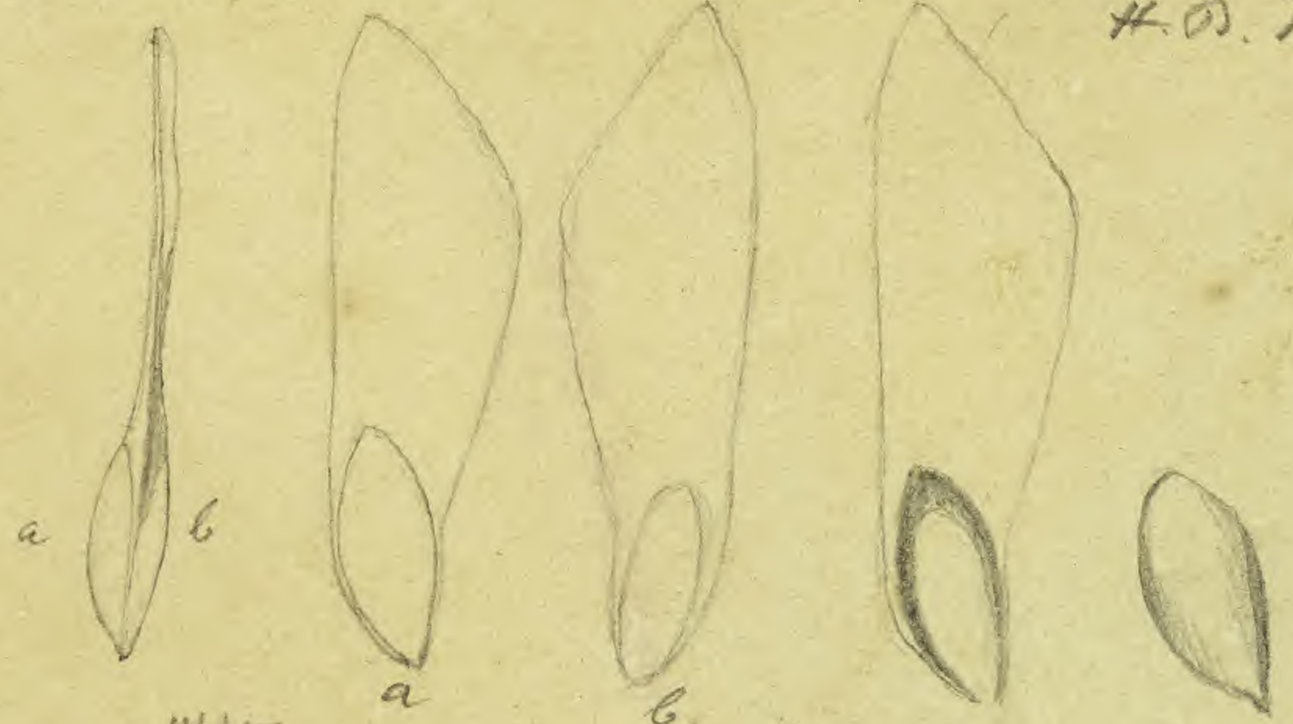
Pinus sylvestris
seed not quite ripe, cones of last year,
H.D. Mission

July 12 1862

Green

× 2



a upper inner surface,
b. exterior lower surface towards the supporting scale

a & b are reverse a is the lower b the outer upper surface

alben × 4

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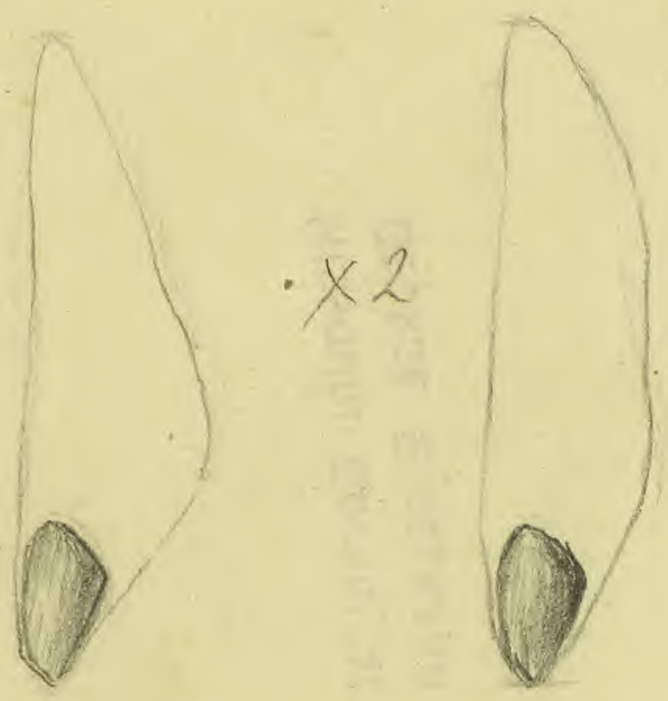
Pinus sylvestris
Berlin

Nov 1862.



×2

lower, inner
side of seed

×4

Cotyls 6-7.

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Pinus sylvestris

H. D. Nissona May 23 1863

May 1863

Greenish green

×4

Back & peculiar very downy

×10

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cm
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MARTIN BRANNAN,
APOTHECARY,
379, N. E. CORNER BROADWAY & O'FALLON STREET,
SIGN OF THE BLUE AND GILT MORTAR.

Pinus sylvestris

May 7 1863

H. B. Morrison. May 4th 1863

male ament with bract & involucr.

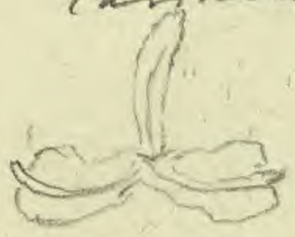
×4.

bract just loosened from its base

3 inner involucral bracts

2 lower later ones connate

lateral



axis the involucr spread out

very deciduous perulae in the axils of which the leaves are formed

bracts still visible falling off before anthers open

lower bracts already fallen off

perulae of bud

young shoot with male flowers before opening, nat. size

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cm
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0 cm 1 2 3 4 5 6 7 8 9 10
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Pinus sylvestris H.S. Missouri 2 May 1870

just in flower — earliest Pine!

all the following seen on 2 inflorescences, branchlets of one branch

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cm
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sylvestris ?

Pinus sylvestris
sub nom P. pungens in H.B. Russia May 1878
very tree

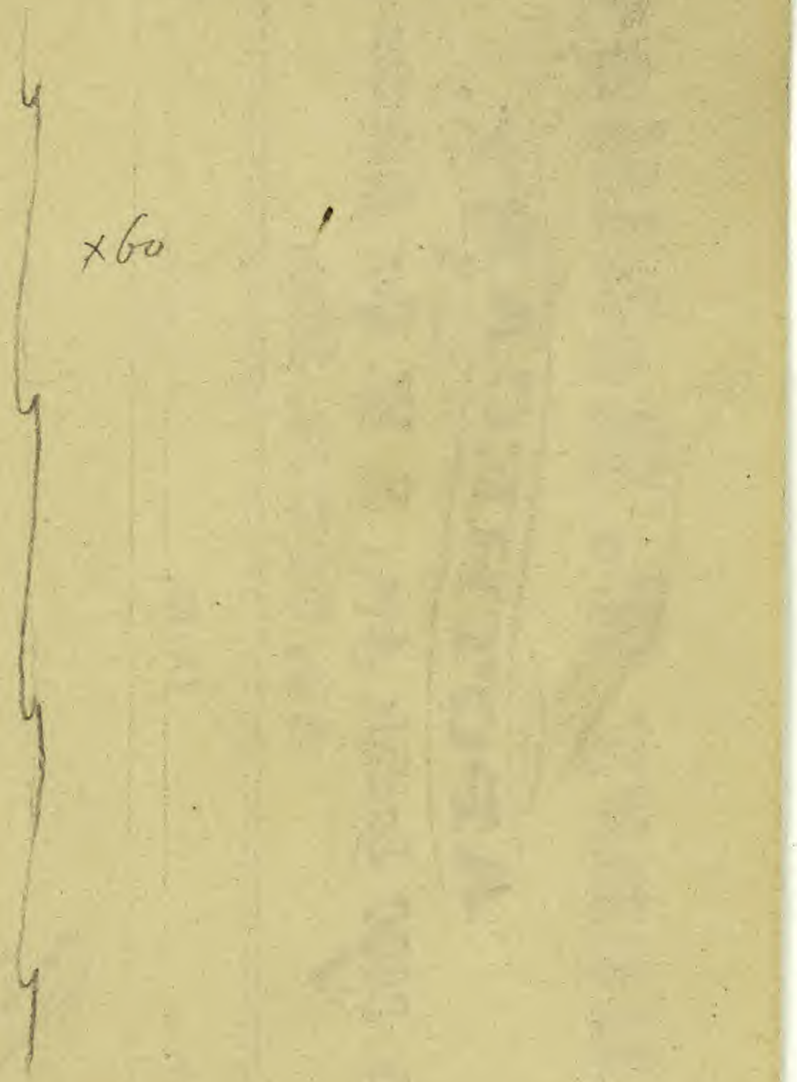
May 12 1878

Leaf 1.3 mm wide

×30

Ducts peripheral, numerous
surrounded by strong hypoderm
no other hypoderm cells, scarcely
any in the corners
a layer under the bundles
of vessels

×60



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Sylvestris ? Jan 29 1878

× 30

calls at Mt Carmel, Ford

Calls at Mt Carmel, Ford

Silvus

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8 Feb

30

P. montana

462-7

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cm
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P. montana

May 12 1878

H.B. Missouri May 1878, frank

× 30

Leaf 1.3 mm wide

Ducts peripheral
surrounded by hypoderm
no other hypoderm on leaf

Henry T. Rohlfing,

APOTHECARY,

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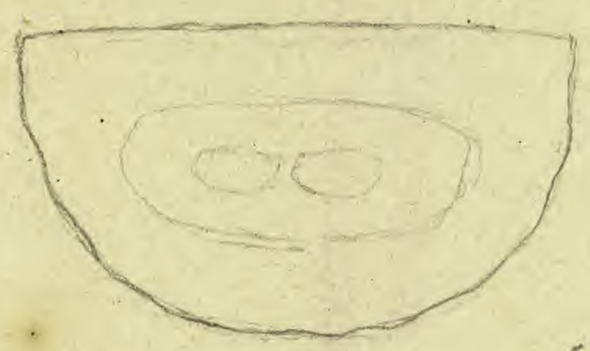
Pinus contorta
var. murrayana Balfour

Oct. 6 18 1870

old leaf of May



young leaf of October

sheath in May, in very young leaves, 8 mm long, consisting of 7-8 or 9 scales obtuse

x60

in leaves 6 months old (Oct.) 6-7 mm long

in leaves 1 year old (May) only 3-4 mm long

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cm
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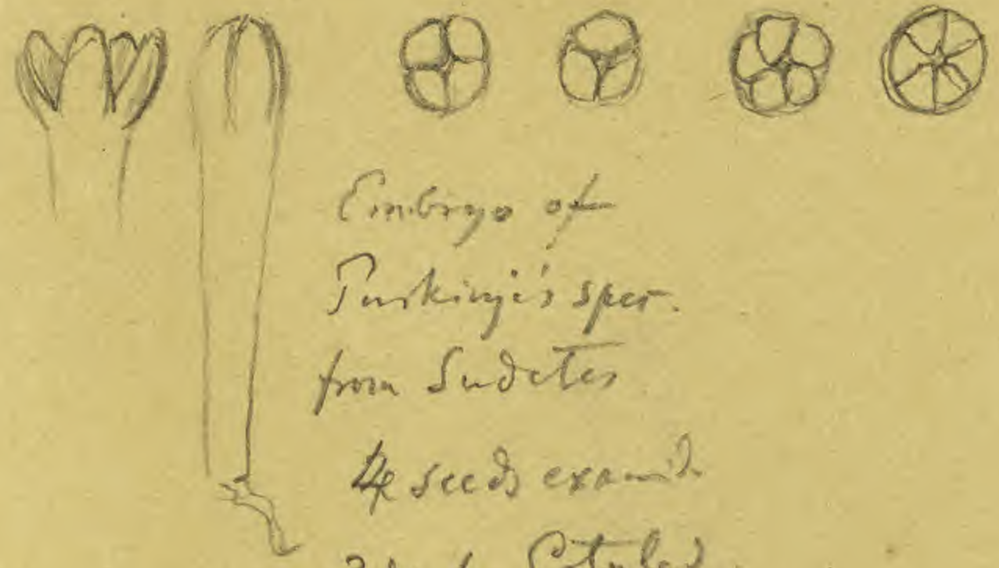
Pinus Pumilio

Octo 1st 1863

×10.



Embryo of
Purkinje's spec.
from Sudetes

4 seeds exam.d

3 × 4 Cotyles.

× 5 × 6 Cotyl!

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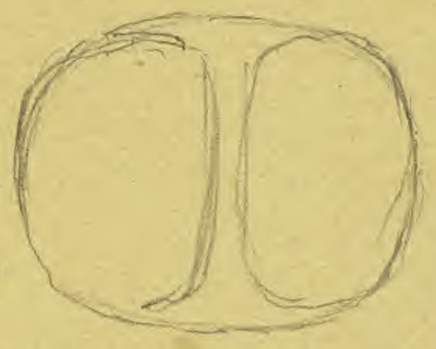
X 415

Pinus Pumilio

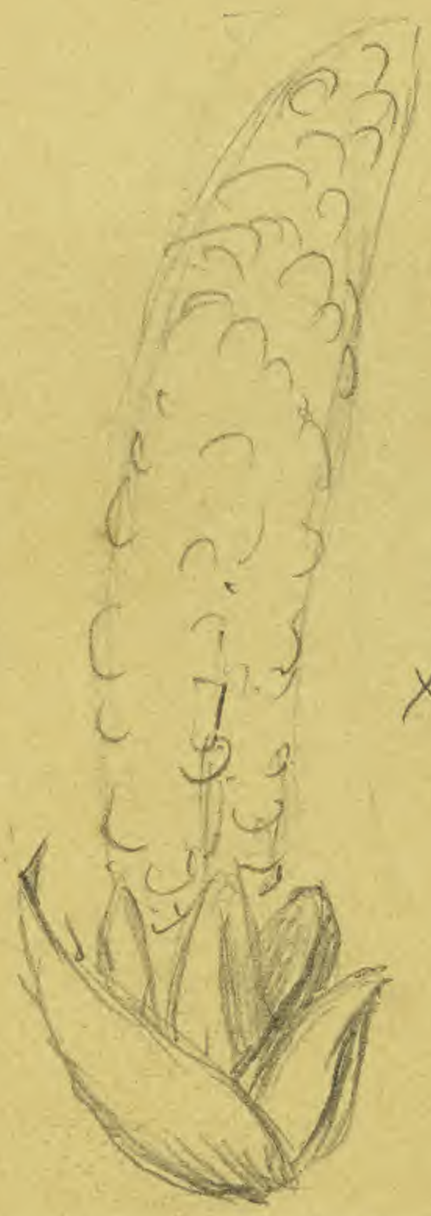
Carsruhe Garden from the Schwagwald

Octob 1st 1863



0.027

0.028



6 involv.
scales

Pollen mascetta invaded by fungi, therefore perhaps too small now

X 4

X 10

0.027 – 0.033

MEAN 0.030

Aneal 8-9
Cilia long

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x 415

" Pinus Pumila "

(Aug 12 1865

coll Chadsford. Pa. Wm M Canby Dec 1865

m
0.034

m
0.033

x 4

x 10

5 c x L

size of Pollen

0.031 – 0.036

average and majority of grains 0.034

x 10

x 10

Dorsal

Upper side

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leaves $2\frac{1}{4}$" long
young sheaths 6–7 lines
second year 2 times long
male inflorescence cylindrical $1\frac{1}{4}$ – $1\frac{1}{2}$ inches long
anthers cylindrical 5–6 l. long
involucral bracts oval obtuse (rounded Packard mostly)
as usual

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